# CS 112-Assignment-1

**Statement**

Implementation of a structure-based Library Information System.

**Implementation Details**

You are required to implement the following 5 interrelated structures.

A. A struct **Book** with
   a. **M**embers: int **ID**, string/char* **BookName**, string/char* **author**, string/char* **ISBN**, int **price**, int **pages**.
   b. **PrintAll** function which cout's the details of all the books.

B. A structure **BookList** with
   a. members: **Book** books (This should be an array of 5 elements)
   b. **PrintAll** function which cout's the details of the entire list of books in the entire array.
   c. A **function** to add new Book to the array at any index.
   d. A **sort** function, that should be able to sort the entire array of books in ascending or descending order of their ID's.
   e. **DeleteAll** function to remove all books in the array.

C. A structure **Student** with
   a. members: int **ID**, string/char* **StdName**, int **RollNo,**.
   b. **PrintAll** function which cout's the details of all the student.

D. A structure **StudentList** with
   a. members: StudentList std (This should be an array of 5 elements).
   b. **PrintAll** function which cout's the details of all the students in the list.
   c. **Add** and **Delete** functions to add and remove students from the array on the basis of studentID.

**Program Flow:**
   1. The entire program has to be menu driven. (Keep the menu simple but beautiful)
   2. When program starts the user should be able to view the Main Menu.
   3. The details of the working of these menus is described below. [*Fig. 1*]
   4. Be sure to demonstrate the exceptions too and handle them properly. By handling, I mean that you should *cout* the message.

**Submission Guidelines:**
   - Submit your work in zipped form at **halimzahid@gmail.com**
   - Subject of the email must be A1_<yourRollNumber>, two points will be deducted for not following email subject line convention.
   - Name of the file should be A1_<yourRollNumber>, two points will be deducted for not following file naming convention.
   - **-50%** credit for plagiarism (cheating) and an **F** in the course. We *will not tolerate* any cheating.

| Main Menu | |
| --- | --- |
| 1. Add New Student. | 7. Show all Books. |
| 2. Delete Existing Student. | 8. Sort Books in Ascending order. |
| 3. Show all Students. | 9. Sort Books in Descending order. |
| 4. Add New Book. | 10. Exit |
| 5. Delete Existing Book. | |
| 6. Show particular Book. | |

*Fig. 1:* Program Flow